

REMARKS

This is in response to the Office Action mailed May 22, 2003. Claims 1-27 have been canceled. New claims 28-57 are offered for entry. Support for the new claims may be found in the original claims as filed and throughout the specification. A separate Abstract has been provided. No new matter is contained in the amendments. Based on the above amendments and the remarks below, Applicant respectfully requests reconsideration and withdrawal of all objections and rejections and allowance of the claims.

I. *Information Disclosure Statement*

The Japanese Patent Abstract, as cited in the Information Disclosure Statement filed April 5, 2002, was originally cited in the International Search Report and is therefore already of record in this national stage application. The previously submitted Form 1449 showed the Japanese reference as two citations, however, the International Search lists the two separate Japanese references in the same context at the top of page 2 of the Report. JP 62 148580 was available from the contents of the International Search Report and was considered by the Examiner. It appears that the content of both is the same or cumulative and that no further Information Disclosure Statement is necessary.

II. *Abstract*

The form of the application has been objected to for lacking an abstract on a separate sheet. Please find enclosed the abstract of the disclosure on a separate sheet of paper and an amendment above requesting its entry in the specification.

III. *Objection to the Specification*

The specification has been objected to for allegedly failing to provide proper antecedent basis for claimed subject matter because the reactive groups of original claim 14 are not disclosed in the specification. Applicant respectfully traverses this objection.

Contrary to the assertion, the reactive groups of original claim 14 are disclosed in the specification at page 7, lines 10-15. The reactive groups of original claim 14 and the specification at page 7, each independently constitute a clear disclosure of the subject matter as originally filed. Therefore, the objection should be removed.

IV. *Rejection of the Claims under 35 U.S.C. § 112, first paragraph*

Original claims 8, 9 and 11 stand rejected under 35 U.S.C. § 112, first paragraph for allegedly failing to comply with the written description requirement. Applicant respectfully traverses this rejection.

Claims 8, 9 and 11 have been canceled in favor of corresponding new claims 39 and 40. The rejection will be addressed in the context of the new claims.

The Examiner has alleged that original claim 8 (new claim 39) claims the organic polymer has low absorption of water and/or a minimum gas permeability, while the specification, at page 7, discloses a polymer with both a very low gas permeability (to exclude oxygen) and a minimum absorption of water (to prevent penetration of ionic compounds). The disclosure at page 7 is merely one embodiment of the claimed invention; it is an embodiment that falls well within the scope of the claim. Claim 39 encompasses embodiments where the organic polymer can (i) have low absorption of water, (ii) have minimum gas permeability or (iii) have

both low absorption of water and minimum gas permeability. The Examiner has not established that one skilled in the art would doubt that Applicant had possession of the claimed invention. In fact, a skilled artisan would readily recognize that Applicant had possession of an embodiment that falls within the scope of claim 39.

The Examiner has alleged that original claim 9 claims an organic polymer wherein said organic polymer can be a poly(meth)acrylic copolymer, while the specification, at page 7, discloses that suitable polymers include poly(meth)acrylic polymers. The claim and the disclosure are consistent with each other. Therefore, the basis of the Examiner's rejection is unclear. Nonetheless, in an effort to expedite prosecution the subject matter cited by the Examiner has been removed from the present claims.

The Examiner has alleged that original claim 11 (new claim 40), which claims that the micro- or nanoparticle contains a glass that is essentially free of micropores, is inconsistent with the specification at pages 6 and 11. The Examiner alleges that page 6 of the specification discloses that the glass is non-porous while page 11 of the specification discloses that the glass is essentially free of micropores. Applicant acknowledges that the Examiner's characterization of the disclosure at page 6 is supported by the specification, but notes there is no disclosure at page 11 consistent with the Examiner's characterization. Therefore, the basis of the Examiner's rejection is unclear with respect to new claim 40. As a general principle, however, Applicant notes that it is possible for the invention to comprise glass that is essentially free of micropores *and* still possess functionally non-porous properties.

Therefore, the rejections should all be removed.

V. *Rejection of the Claims under 35 U.S.C. § 112, second paragraph*

Original claims 17 and 23-26 stand rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite. Applicant respectfully traverses this rejection.

Original claims 17 and 23-26 have been canceled in favor of corresponding new claims 47 and 53-56. The rejection will be addressed in the context of the new claims. The dependency of claim 47 is correctly directed to claim 46, which is also a method claim. Claims 53-56 set forth steps involved in the claimed method. Therefore, the rejection should be removed.

VI. *Rejection of the Claims under 35 U.S.C. § 101*

Original claims 23-26 stand rejected under 35 U.S.C. § 101 for allegedly claiming a recitation of use without setting forth any steps involved in the process. Applicant respectfully traverses this rejection.

Original claims 23-26 have been canceled in favor of corresponding new claims 53-56. The rejection will be addressed in the context of the new claims. Claims 53-56 set forth steps involved in the claimed method. Therefore, the rejections should be removed.

VII. *Rejection of the Claims under 35 U.S.C. § 102*

A. *Huber et al.*

Original claims 1-5, 8-10, 19 and 27 stand rejected under 35 U.S.C. § 102(a) as being allegedly anticipated by Huber *et al.* Applicant respectfully traverses this rejection.

Huber *et al.* was published in 2000, as evidenced by both Paper Number 4, the PTO form 1449 submitted on April 5, 2002, and by the Notice of References Cited, PTO form 892. The

present application was filed on July 17, 2000 and claims foreign priority back to July 15, 1999, which antedates the cited reference. Enclosed herewith is a copy of the certified foreign priority document. An English translation thereof will be supplied as soon as it is available to perfect the priority claim. *See* MPEP 706.02(b). Huber *et al.* does not constitute prior art and therefore cannot anticipate the presently claimed subject matter. Therefore, the rejection should be removed.

B. GB 2,132,348

Original claims 1-9 and 19 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by GB 2,132,348. Applicant respectfully traverses this rejection.

Under 35 U.S.C. § 102, a claim can only be anticipated if every element in the claim is expressly or inherently disclosed in a single prior art reference. *See Kalman v. Kimberly Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984). GB 2,132,348 discloses, in claims 5 and 13, a luminescence material which is incorporated in a carrier material which is relatively permeable to oxygen and relatively impermeable to interfering quenchers. In contrast thereto, the carrier material in the present invention is limited to polyacrylonitrile or polyacrylonitrile copolymers and is substantially impermeable to gas. *See*, for example, specification, page 7, lines 18-20. Thus, there is a clear difference between the subject matter of the present claims and the cited reference. Therefore, the disclosure of GB 2,132,348 cannot anticipate the presently amended claims, and the rejection should be removed.

C. WO 99/06821

Original claims 1-5, 7-9, 11, 12, 22 and 27 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by GB 2,132,348. Applicant respectfully traverses this rejection.

Under 35 U.S.C. § 102, a claim can only be anticipated if every element in the claim is expressly or inherently disclosed in a single prior art reference. *See Kalman v. Kimberly Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984). WO 99/06821 discloses luminescent particles wherein a luminescent dye is encapsulated in a matrix which may be impermeable to gases. *See* page 12, lines 13-15. The reference does not disclose that the carrier material is polyacrylonitrile or polyacrylonitrile copolymers, as required by the present claims. The presently amended claims are not anticipated by the reference because WO 99/06821 does not disclose every element of the claims. Therefore, the rejection should be removed.

VIII. Rejection of the Claims under 35 U.S.C. § 103

A. WO 99/06821

Original claims 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over WO 99/06821. Applicant respectfully traverses this rejection.

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art. *See In re Piasecki*, 223 USPQ 785, 787-88 (Fed. Cir. 1984). The Examiner can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references in

such a way as to produce the invention as claimed. *See In re Fine*, 5 USPQ2d 1596,1598 (Fed. Cir. 1988). There is no basis for concluding that an invention would have been obvious solely because it is a combination of elements that were known in the art at the time the invention was made. *See Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1556 (Fed. Cir. 1995). Instead, what is needed is a reason, suggestion, or motivation in the prior art that would motivate one of ordinary skill to combine the cited references, and that would also suggest a reasonable likelihood of success in making or using the claimed invention as a result of that combination. *See In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). In the present case, the Examiner's burden has not been satisfied.

The Examiner alleges that "[i]t is notoriously well known that the majority of sol-gel produced glasses and the most stable glasses are silica based." The Examiner has not provided a reason, suggestion or motivation *in the prior art* that would motivate one of ordinary skill in the art to combine the teachings *of the prior art* to arrive at the present invention. For this reason, the Examiner has not established a *prima facie* case of obviousness.

Nonetheless, in an effort to expedite prosecution, the claims have been amended to recite a luminescent micro- or nanoparticle comprising polyacrylonitrile or polyacrylonitrile copolymers. Polyacrylonitrile or polyacrylonitrile copolymers are not disclosed in WO 99/06821. The claims are patentable over the cited reference.

B. Zhang *et al.* (U.S. Patent No. 5,786,219)

Original claims 1, 2, 8-10, 14, 15 and 19 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Zhang *et al.* (U.S. Patent No. 5,786,219). Applicant respectfully traverses this rejection.

Zhang *et al.*, contrary to the Examiner's statement, does not disclose luminescence dyes with a long decay time (*see* present specification, page 5, lines 10-19); rather, the disclosure at Column 10, lines 25-29 relates to "long wavelength dyes", *i.e.* dyes which exhibit excitation and emission in a long wavelength range. This is completely different than the claimed luminescent micro- or nanoparticles that comprise luminescent dyes with a long decay time. During the development of the present invention, it was recognized that luminescent dyes with a long decay time need a more improved shield for contact with oxygen when compared to other dyes. Such a shield is necessary in order to be able to obtain a constant signal during measurement. An adequate shield can be obtained by encapsulating in polyacrylonitrile polymers and copolymers, as is supported by the Examples of the present application.

As cited in section VIII(A) above, the Examiner has not provided a reason, suggestion or motivation *in the prior art* that would motivate one of ordinary skill in the art to combine the teachings of the prior art to arrive at the present invention. Rather, it appears that the Examiner has used hindsight analysis to reconstruct the claimed invention. As the Federal Circuit has held numerous times, a hindsight analysis such as that employed by the Examiner in the present case is impermissible -- instead, the Examiner must show suggestions, explicit or otherwise, that would compel one of ordinary skill to combine the cited references in order to make and use the claimed invention. *See, e.g., Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143 (Fed.

Cir. 1985) (“When prior art references require selective combination by the [fact-finder] to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself.”); *Fine*, 5 USPQ2d at 1600 (“One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.”); *In re Pleuddemann*, 910 F.2d 823, 828 (Fed. Cir. 1990) (noting that use of an applicant’s specification as though it were prior art to support an obviousness determination is legal error); *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991) (holding that both the suggestion to combine references, and a reasonable expectation of success in making the claimed invention, “must be founded in the prior art, not in the applicant’s disclosure.”). The Board has also provided the same mandate on this issue:

it is impermissible to use the claimed invention as an instruction manual or “template” to piece together isolated disclosures and teachings of the prior art so that the claimed invention may be rendered obvious a rejection based on § 103 must rest on a factual basis, with the facts being interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, the examiner has the initial duty of supplying the factual basis for the rejection he advances. He may not, because he doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis.

Ex parte Haymond, 41 USPQ2d 1217, 1220 (Bd. Pat. App. Int. 1996). Thus, the Examiner’s hindsight analysis in the present case is impermissible and cannot be used to attempt to establish a *prima facie* case of obviousness.

C. Singer *et al.* (U.S. Patent No. 5,573,909)

Original claims 1-3, 7-10, 14, 15 and 19 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Singer *et al.* (U.S. Patent No. 5,573,909). Applicant respectfully traverses this rejection.

The Examiner has not established a *prima facie* case of obviousness because, as outlined in sections VIII(A-B) above, the Examiner has not provided a reason, suggestion or motivation *in the prior art* that would motivate one of ordinary skill in the art to combine the teachings of *the prior art* to arrive at the present invention. Similar to Zhang *et al.* in section VIII(B) above, Singer *et al.* does not disclose any luminescent dyes *with a long decay time*. Further, Singer *et al.* does not disclose luminescent micro- or nanoparticles that comprise polyacrylonitrile or polyacrylonitrile copolymers *and* luminescent dyes with a long decay time. The Examiner has failed to establish how one of ordinary skill in the art would be motivated to make such a combination, absent the teachings of the present disclosure.

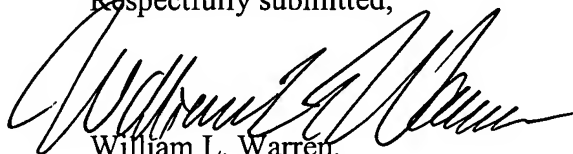
IX. Allowable Subject Matter

Applicant gratefully acknowledges recognition of the allowable subject matter of original claims 16-18, 20 and 21, if rewritten in independent form. Accordingly, new claims 46 and 50, which replace original claims 16 and 20, have been rewritten in independent form and have incorporated the subject of the claim from which they did depend.

X. Conclusion

It is believed that all objections and rejections have addressed and either have been overcome or rendered moot. Accordingly, Applicant hereby requests allowance of the pending claims. If there are any issues that can be resolved by a telephone conference or an Examiner's amendment, the Examiner is invited to call the undersigned attorney at (404) 853-8081.

Respectfully submitted,



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